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### 磁悬浮控制系统混沌预测

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### CHAOS PREDICTION FOR MAGNETIC LEVITATION CONTROL SYSTEMS

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摘要

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**摘要** 根据谐波平衡原理,理论上对非线性磁悬浮控制系统的倍周期分叉及混沌行为进行了分析,给出了系统产生倍周期分叉的近似条件,确定了系统混沌存在近似的位置,这为保证此系统实现稳定控制及优化控制器设计提出了一种有利的理论依据

**关键词:** 磁悬浮 控制系统 混沌 分叉 预测

**Abstract:** Based on the harmonic balance principle, the saddle node, the period doubling bifurcation and chaos behavior are discussed in theory for a magnetic levitation control system. The approximate conditions, which determine the existence and onset zone of chaos in the system, are given. The results obtained may be helpful in design and control of the nonlinear magnetic levitation control system.

**Keywords:** magnetic levitation control system chaos bifurcation prediction

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